LOW TEMPERATURE NITROCARBURIZING SALT AND METHOD OF USE

ABSTRACT OF THE DISCLOSURE

A composition for nitrocarburizing stainless steel parts and a method for producing a nitride or hard case on such parts using the composition, are provided. The composition includes alkali metal cyanate and alkali metal carbonate, wherein the cyanate ion is present in a weight percentage of greater than 45% and less than 55.2%. The composition is fused and maintained between about 750°F and about 950°F depending upon the type of stainless steel to be treated. The workpiece is immersed in the fused bath and left in until a satisfactory compound layer or case is formed. With austenitic stainless steel, the piece is immersed from about four hours to about six hours at temperatures between about 750°F and about 950°F, preferably between 750°F and 850°F to maintain corrosion resistance.

With 400 series stainless steel, increased corrosion resistance is achieved by immersion for between four and six hours at 950°F.